

# West Michigan Uniform, Inc.

## Holland, Michigan



### Case Study

#### Company Puts On Uniform – Declares War on Waste

West Michigan Uniform, Inc. is located in the city of Holland, Ottawa County, Michigan. The company has 65 to 70 employees working one shift, five days a week. West Michigan Uniform, Inc. leases uniforms, towels, and similar products to businesses and launders them on a regular basis. The heavy concentration of businesses in the area provides the company a great source of clients.

#### Waste Reduction Assessment

The management requested a free waste reduction/pollution prevention assessment from Michigan's Retired Engineer Technical Assistance Program. A RETAP team visited the company and assessed the opportunities for pollution prevention, waste reduction, and energy conservation at the facility.



#### Gas Consumption Reduced Further

Business expenses for gas consumption were ranging from \$6,300 to \$7,200 per month. The company, prior to the RETAP assessment, had implemented steps to cut gas expenses by \$1,500 per month by purchasing gas through a broker. Considering the nature of the business, it is not surprising that RETAP found opportunities to further reduce gas expenses and waste.

Recommendations were to:

1. *insulate about 700 feet of steam supply and condensate return line and insulate the hot water heater and about 800 feet of hot water line;*

2. *reduce the steam pressure to 15 psi for most operations (to save on energy, maintenance, insurance cost, inspection fees, and operator training);*
3. *install controls on the dryers to control the moisture content of the exhaust to allow installation of a counter-current air flow system to 12 dryers (reducing total heat needed for drying); and*
4. *install a heat exchanger in the combined exhaust system to reheat water in the washer system and reduce steam demand.*



MICHIGAN DEPARTMENT OF  
ENVIRONMENTAL QUALITY  
ENVIRONMENTAL ASSISTANCE DIVISION  
PO BOX 30457  
LANSING MI 48909-7957  
[www.michigan.gov/deq](http://www.michigan.gov/deq)



Environmental Assistance Center  
800-662-9278

February 2002 • #9848



AUTHORITY: PA 451 OF 1994 TOTAL COPIES: 2700  
TOTAL COST: \$186.44 COST PER COPY: \$.07  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY



The obstacle to implementing these recommendations was finding enough time. Finally, the company decided to subcontract to have the work done. Implementation of these recommendations saved the company about \$10,000 to \$12,000 per year, and these savings continue on an annual basis.

### **Cut Electrical Energy Consumption**

RETAP found that electrical expenses were high because of the imbalance in three-phase electrical service. The system configuration was a delta configuration. It appeared that the single-phase demand was not balanced and a very poor power factor in one leg caused the surcharges. RETAP recommended the addition of capacitors where needed and balancing of the electrical imbalances in the electrical system. These recommendations encountered no serious obstacles and were implemented by the company's Technical Services Department. Implementing these recommendations saved approximately \$7,000 to \$8,000 per year. These savings continue year after year.



Another waste of electrical energy was the location of lighting, situated too high above the work surfaces to be effective. It was

recommended to lower lighting fixtures from 16 feet to 10 feet, to yield about three times the effective incident lighting. In addition to saving energy and money, there are fewer operating errors and eyestrain was reduced.

### **Water Waste Reduction**

Using excess water in this type of operation can represent a large expense. RETAP identified several opportunities to reduce water waste by:

1. *using water softener backwash water to quench steam when boiler blow-down occurs;*

2. *installing water meters and changing the softener recharge to demand volume basis rather than a set time schedule (reducing salt use, water volume, and waste water surcharges); and*
3. *processing oil and grease-laden goods separately to reduce oil and grease in the wastewater discharge and achieve multiple waste reduction benefits.*

There were no serious obstacles to implementing the recommendations, and water demand was reduced by about 1,350,000 gallons of water per year. In turn, this reduced the cost for gas, water, and wastewater. The combined savings were about \$13,000 per year.

### **Landfill Waste Reductions**

RETAP found that worn garments and other discarded cloth items generate a large volume of material that is sent to the landfill. The recommendation was made to find a commercial outlet for the material.



The company found an outlet for these goods. This reduced the volume of material going to landfill by 10 percent and cut the cost for tipping fees to haulers by \$600 per year.

As a result of the RETAP assessment and implementation of some of the recommendations, West Michigan Uniform, Inc. reduced consumption and waste for a total annual savings of \$33,600.

The Michigan Department of Environmental Quality (MDEQ) will not discriminate against any individual or group on the basis of race, sex, religion, age, national origin, color, marital status, disability, or political beliefs. Questions or concerns should be directed to the MDEQ Office of Personnel Services, PO Box 30473, Lansing, MI 48909.